

WHAT IS CLAIMED IS:

1. A content retrieval device having a multi-call function allowing use of a plurality of connection methods for retrieving content data from a server via a communication network under a suitable connection method, the content retrieval device  
5 comprising:

a browser section for generating a retrieval request specifying locational information of content data to be retrieved presently;

a protocol control section for determining a connection  
10 method for the content data specified by said browser section prior to reception of the content data; and

a communication control section for receiving the content data specified by said browser section from said server under the connection method determined by said protocol control  
15 section.

2. The content retrieval device according to claim 1, wherein content data includes locational information of each of sub-content data linked to the content data and connection method information indicating a connection method suitable for each of  
5 the sub-content data,

said browser section extracts the locational information and the connection method information of each of the

sub-content data by analyzing the received content data, and then  
generates a retrieval request specifying the locational  
10 information of sub-content data to be retrieved presently, and  
said protocol control section determines a suitable  
connection method for reception of the sub-content data specified  
by said browser section based on the connection method information  
extracted by said browser section.

3. The content retrieval device according to claim 1,  
wherein content data includes locational information and a file  
attribute of each of sub-content data linked to the content data,  
the content retrieval device further comprises a  
5 connection information management section for managing a  
connection information table including description of a suitable  
connection method in association with the file attribute of the  
content data,

said browser section extracts a set of the locational  
10 information and the file attribute of each of the sub-content data  
by analyzing the received content data and holds the set as  
internal information, and then generates a retrieval request  
specifying the locational information of sub-content data to be  
retrieved presently, and

15 said protocol control section determines a suitable  
connection method by, upon reception of the retrieval request  
generated by said browser section, receiving the file attribute

pairing with the locational information specified in the  
retrieval request from said browser section and then extracting  
20 the suitable connection method pairing with the file attribute  
received from said browser section from said connection  
information management section.

4. The content retrieval device according to claim 1,  
wherein locational information is allocated to content data for  
indicating a storage location of the content data in said server,  
part of the locational information representing a feature of the  
5 content data,

the content retrieval device further comprises a  
connection information management section for managing a  
connection information table including description of a suitable  
connection method in association with the feature of the content  
10 data, and

said protocol control section determines a suitable  
connection method by, upon reception of the retrieval request  
generated by said browser section, receiving the suitable  
connection method pairing with the part of the locational  
15 information included in the retrieval request from said  
connection information management section.

5. The content retrieval device according to claim 1,  
wherein said server is capable of transmitting a content header

including a file attribute of content data, as well as the content data,

5           the content retrieval device further comprises a connection information management section for managing a connection information table including description of a suitable connection method in association with the file attribute of the content data,

10           said browser section generates a first retrieval request specifying locational information of content data to be retrieved presently,

          upon reception of the first retrieval request generated by said browser section, said protocol control section generates a  
15   second retrieval request for retrieving a content header of the content data specified in the first retrieval request,

          said communication control section receives the content header specified in the second retrieval request generated by said protocol control section, and

20           said protocol control section determines a suitable connection method by extracting the suitable connection method pairing with the file attribute included in the content header received by said communication control section from said connection information management section.

6. A content retrieval method for retrieving content data from a server via a communication network under a suitable

connection method among a plurality of connection methods by use of a multi-call function, the method comprising the steps of:

5           generating a content retrieval request specifying locational information of content data to be retrieved presently;

          determining a suitable connection method prior to reception of the content data specified by said step of generating a content retrieval request; and

10           receiving the content data specified by said step of generating a content retrieval request from said server under the connection method determined by said step of determining a suitable connection method.

7. The content retrieval method according to claim 6, wherein content data includes locational information of each of sub-content data linked to the content data and a connection method suitable for each of the sub-content data,

5           said step of generating a content retrieval request extracts the locational information and the connection method information of each of the sub-content data by analyzing the received content data, and then generates a content retrieval request specifying the locational information of sub-content data

10   to be retrieved presently, and

          said step of determining a suitable connection method determines a suitable connection method based on the connection method information extracted by said step of generating a content

retrieval request.

8. The content retrieval method according to claim 6, wherein the content data includes locational information and a file attribute of each of sub-content data linked to the content data,

5 a connection information table including description of a suitable connection method in association with the file attribute of the content data is managed in advance,

10 said step of generating a content retrieval request extracts a set of the locational information and the file attribute of each of the sub-content data by analyzing the received content data and holds the set as internal information, and then generates a content retrieval request specifying the locational information of sub-content data to be retrieved presently, and

15 said step of determining a suitable connection method determines a suitable connection method by, upon reception of the content retrieval request generated by said step of generating a content retrieval request, receiving the file attribute pairing with the locational information specified in the content  
20 retrieval request from said step of generating a content retrieval request, and then extracting the suitable connection method pairing with the file attribute received from said step of generating a content retrieval request from said connection

information table.

9. The content retrieval method according to claim 6,  
wherein locational information is allocated to content data for  
indicating a storage location of the content data in said server,  
part of the locational information representing a feature of the  
5 content data,

a connection information table including description  
of a suitable connection method in association with the feature  
of the content data is managed in advance, and

10 said step of determining a suitable connection method  
determines a suitable connection method by, upon reception of the  
content retrieval request generated by said step of generating  
a content retrieval request, extracting the suitable connection  
method pairing with the part of the locational information  
included in the content retrieval request from said connection  
15 information table.

10. The content retrieval method according to claim 6,  
wherein said server is capable of transmitting a content header  
including a file attribute of content data, as well as the content  
data,

5 a connection information table including description  
of a suitable connection method in association with the file  
attribute of the content data is managed in advance,

the method further comprises the steps of:

upon reception of the content retrieval  
10 request generated by said step of generating a content retrieval  
request, generating a header retrieval request for retrieving a  
content header of the content data specified in the content  
retrieval request; and

receiving the content header specified in the header  
15 retrieval request generated by the step of generating a header  
retrieval request from said server, and

said step of determining a suitable connection method  
determines a suitable connection method by extracting the  
suitable connection method pairing with the file attribute  
20 included in the content header received by said step of receiving  
the content header from said connection information table.

11. A program-recorded recording medium on which recorded  
is a program for retrieving content data from a server via a  
communication network under a suitable connection method among  
a plurality of connection methods by use of a multi-call function,  
5 the program comprising the steps of:

generating a content retrieval request specifying  
locational information of content data to be retrieved presently;

determining a suitable connection method prior to  
reception of the content data specified by said step of generating  
10 a content retrieval request; and



receiving the content data specified by said step of generating a content retrieval request from said server under the connection method determined by said step of determining a suitable connection method.

12. A program-recorded recording medium according to claim 11, wherein content data includes locational information of each of sub-content data linked to the content data and a connection method suitable for each of the sub-content data,

5           said step of generating a content retrieval request extracts the locational information and the connection method information of each of the sub-content data by analyzing the received content data, and then generates a content retrieval request specifying locational information of sub-content data to  
10 be retrieved presently, and

          said step of determining a suitable connection method determines a suitable connection method based on the connection method information extracted by said step of generating a content retrieval request.

13. A program-recorded recording medium according to claim 11, wherein the content data includes locational information and a file attribute of each of sub-content data linked to the content data,

5           a connection information table including description

of a suitable connection method in association with the file attribute of the content data is managed in advance,

10       said step of generating a content retrieval request extracts a set of the locational information and the file attribute of each of the sub-content data by analyzing the received content data and holds the set as internal information, and then generates a content retrieval request specifying the locational information of sub-content data to be retrieved presently, and

15       said step of determining a suitable connection method determines a suitable connection method by, upon reception of the content retrieval request generated by said step of generating a content retrieval request, receiving the file attribute pairing with the locational information specified in the content retrieval request from said step of generating a content retrieval request, and then extracting the suitable connection method pairing with the file attribute received from said step of generating a content retrieval request from said connection information table.

14. A program-recorded recording medium according to claim 11, wherein locational information is allocated to content data for indicating a storage location of the content data in said server, part of the locational information representing a feature  
5   of the content data,



15 retrieval request generated by the step of generating a header  
retrieval request from said server, and

said step of determining a suitable connection method  
determines a suitable connection method by extracting the  
suitable connection method pairing with the file attribute  
20 included in the content header received by said step of receiving  
the content header from said connection information table.

16. A program for retrieving content data from a server  
via a communication network under a suitable connection method  
among a plurality of connection methods by use of a multi-call  
function, the program comprising the steps of:

5 generating a content retrieval request specifying  
locational information of content data to be retrieved presently;

determining a suitable connection method prior to  
reception of the content data specified by said step of generating  
a content retrieval request; and

10 receiving the content data specified by said step of  
generating a content retrieval request from said server under the  
connection method determined by said step of determining a  
suitable connection method.

17. A program according to claim 16, wherein content data  
includes locational information of each of sub-content data  
linked to the content data and a connection method suitable for

each of the sub-content data,

5           said step of generating a content retrieval request  
extracts the locational information and the connection method  
information of each of the sub-content data by analyzing the  
received content data, and then generates a content retrieval  
request specifying locational information of sub-content data to  
10 be retrieved presently, and

          said step of determining a suitable connection method  
determines a suitable connection method based on the connection  
method information extracted by said step of generating a content  
retrieval request.

18. A program according to claim 16, wherein the content  
data includes locational information and a file attribute of each  
of sub-content data linked to the content data,

          a connection information table including description  
5 of a suitable connection method in association with the file  
attribute of the content data is managed in advance,

          said step of generating a content retrieval request  
extracts a set of the locational information and the file  
attribute of each of the sub-content data by analyzing the  
10 received content data and holds the set as internal information,  
and then generates a content retrieval request specifying the  
locational information of sub-content data to be retrieved  
presently, and

said step of determining a suitable connection method  
 15 determines a suitable connection method by, upon reception of the  
 content retrieval request generated by said step of generating  
 a content retrieval request, receiving the file attribute pairing  
 with the locational information specified in the content  
 retrieval request from said step of generating a content retrieval  
 20 request, and then extracting the suitable connection method  
 pairing with the file attribute received from said step of  
 generating a content retrieval request from said connection  
 information table.

19. A program according to claim 16, wherein locational  
 information is allocated to content data for indicating a storage  
 location of the content data in said server, part of the locational  
 information representing a feature of the content data,

5 a connection information table including description  
 of a suitable connection method in association with the feature  
 of the content data is managed in advance, and

said step of determining a suitable connection method  
 determines a suitable connection method by, upon reception of the  
 10 content retrieval request generated by said step of generating  
 a content retrieval request, extracting the suitable connection  
 method pairing with the part of the locational information  
 included in the content retrieval request from said connection  
 information table.

20. A program according to claim 16, wherein said server is capable of transmitting a content header including a file attribute of content data, as well as the content data,

a connection information table including description  
5 of a suitable connection method in association with the file attribute of the content data is managed in advance,

the method further comprises the steps of:

upon reception of the content retrieval  
request generated by said step of generating a content retrieval  
10 request, generating a header retrieval request for retrieving a content header of the content data specified in the content retrieval request; and

receiving the content header specified in the header  
retrieval request generated by the step of generating a header  
15 retrieval request from said server, and

said step of determining a suitable connection method  
determines a suitable connection method by extracting the  
suitable connection method pairing with the file attribute  
included in the content header received by said step of receiving  
20 the content header from said connection information table.